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Independent thinking from the IFoA

Part of the IFoA's purpose is to promote debate within and beyond the profession, and to position our members as leading voices on the biggest public policy challenges of our time.

We aim to showcase the diverse range of expertise and critical thinking both within and outside the profession.

Our 'think' series seeks to promote debate on topics across the spectrum of actuarial work, providing a platform for members and stakeholders alike and sharing views that may differ from the IFoA's house view. In doing this, we hope to challenge the status quo, question the orthodoxy, and shine a light on complex or under-examined issues, thereby stimulating discussion and dialogue to help tackle issues in a different way.



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Introduction

Obesity has surged to the forefront of global health concerns, with prevalence more than doubling in adults and quadrupling in children since the 1990s. Not only is obesity a medical condition, it is also linked to socioeconomic disparities and many clinical complications. These have led to a major burden on health systems around the world. Simultaneously, people are living longer lives, while spending more of their later life in poorer health, with many of the diseases that manifest in later life linked to obesity.

While the management of obesity previously focused on diet and behavioural changes, there has recently been a paradigm shift in its treatment and management. Antiobesity medications (AOMs) have been featuring prominently in discussions in many spheres of our lives, yet they are just one of many approaches for weight management. Health systems

around the world are exploring efforts to reduce the population health burden of obesity, through interventions such as community action, clinical weight management services and surgical procedures.

Effective weight management is highly valuable from many perspectives. From an individual perspective, it leads to improved quality of life and a reduced burden of clinical complications. At the societal level, healthier populations can drive increased productivity and lower healthcare costs, on a national and global scale. From an actuarial perspective, effective weight management will have implications on insurance, pension schemes, public policy and the future economic and healthcare landscape.

The wider economic and societal value that effective weight management brings has historically been understudied and underestimated. However, this matters to us collectively as actuaries, decision-makers, carers, patients, taxpayers and welfare recipients.

From an actuarial perspective, effective weight management will have implications on insurance, pension schemes, public policy and the future economic and healthcare landscape.



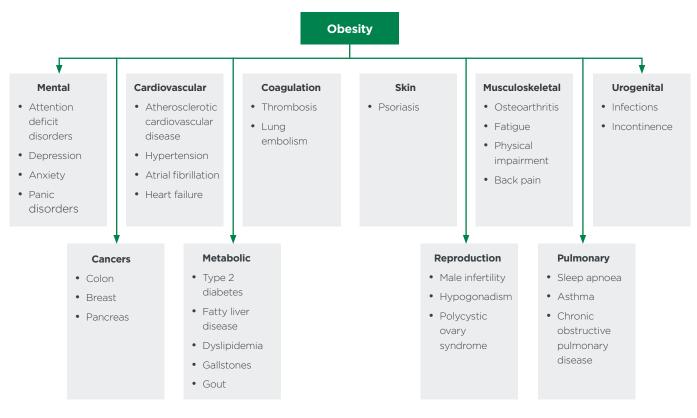
Obesity and its impact on health

Obesity is a complex health condition with many interrelated risk factors and complications. It is caused by complex interactions between a range of biological, environmental, socioeconomic, psychological, and behavioural factors.¹

Currently, obesity is defined as excessive fat deposits that can impair health, and is identified in adults who have a body mass index (BMI) greater than or equal to 30.¹ It is a well-known risk factor for many diseases and is increasingly recognised as a chronic disease in its own right by various medical and scientific organisations worldwide, including the World Health Organisation.¹ More recently, clinical experts have recommended a more rigorous definition for the clinical diagnosis of obesity, which may have implications on the number and the health profiles of patients receiving treatment.²

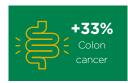
Obesity also has an indirect impact on health through a large number of obesity-related comorbidities (ORCs), including mental health conditions (Figure 1). As a result, people with a higher BMI tend to have higher healthcare needs (for example more hospital admissions, prescriptions and primary care visits).³⁻⁵ In high-income countries such as the UK, obesity is disproportionately prevalent among disadvantaged groups, whether defined by geography, ethnicity, income, or education.^{6,7}

Figure 1. Overview of obesity-related comorbidities (adapted from Muller et al., Ungvari et al., Yu et al., Wang et al., Quinones-Ossa et al.⁸⁻¹²)



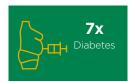
Relative risk from obesity (BMI ≥ 30) vs normal weight











The World Obesity Atlas estimated that the total number of adults living with obesity will increase by 115% between 2010 to 2030 to about 1.13 billion.

The rising prevalence of obesity, ORCs and subsequent disability also contributes to growing demand for long-term health and social care, including care home provision, home support services and informal care, resulting in more complex care coordination. The World Obesity Atlas estimated that the total number of adults living with obesity will increase by 115% between 2010 to 2030 to about 1.13 billion. As of 2025, 21% of adults globally are living with obesity.¹³

These pressures are further intensified by demographic trends, particularly as the baby boomer generation enters older age with significantly higher obesity rates than previous cohorts. A ORCs often compound with age-related functional limitations such as frailty and activities of daily living. While overall life expectancy has improved in recent decades, these gains have increasingly been accompanied by more years lived in poor health. Many of the later life diseases contributing to this are ORCs.

At the other end of the lifespan, the global prevalence of overweight and obesity in children and adolescents has been increasing over the last three decades.¹⁷ As childhood obesity is a key risk factor for obesity in later life, this paints a bleak picture of our future health.

The current and future burden of obesity and its complications have far-reaching implications for health systems, retirement and economic policies. It also impacts how we plan our lives on an individual level.



Preventing and managing obesity

In light of these growing pressures, it is increasingly important to research and implement effective strategies for obesity prevention and management throughout people's lives. There are numerous approaches to preventing and managing obesity, spanning primary, secondary, and tertiary prevention strategies (*Table 1*).¹⁸ These include lifestyle interventions such as physical activity programmes, regulation such as sugar taxes, AOMs and surgery.¹⁹

Weight management in the past

Historically, weight management efforts have centred on primary prevention strategies involving lifestyle interventions: diet, physical activity, and behavioural change. However, in recent years, surgical options such as bariatric surgery and pharmacological treatments (AOMs) have become more accessible, via both public and private healthcare provision. These interventions are financed by a mixture of taxpayers, insurers, employers, and individuals, depending on the country.²²

In the UK, there is an increasing emphasis on tackling obesity via multiple publicly funded primary and secondary prevention strategies, aiming to reduce obesity-related hospital admissions through strengthened nutritional policy, expanded primary care access, and the scaling of digital and community-based weight management services.²³ Yet private spending on healthcare has grown over the last decade.²⁴

Table 1. Approaches for preventing and managing obesity

Prevention level	Target group	Goal	Most common interventions
Primary prevention (health promotion and population level)	General population of people at risk (children, sedentary adults)	Support healthy behaviours and environments via health promotion; prevent onset of overweight and obesity	Community and school-based nutrition and physical activity programmes; public health campaigns; urban design for active living; sugar taxes; regulation of food marketing
Secondary prevention (early detection and intervention)	Individuals who are overweight or have early obesity	Detect and halt progression to obesity or severe obesity; prevent complications	Screening (BMI, waist circumference); general physician (GP)/primary care advice; referral to structured weight management programmes; behaviour change support; use of AOMs in higher-risk cases with the aim to avoid further complications. ²⁰
Tertiary prevention (management of established obesity)	Individuals with obesity and its complications	Reduce complications; improve quality of life; prevent further deterioration	Bariatric surgery for severe obesity; AOMs for sustained weight loss; management of comorbidities through e.g. NHS Better Health services; NHS Type 2 Diabetes Path to Remission Programme; NHS Digital Weight Management Programme ²¹

Globally, there is also increasing investment by governments and health and life sciences organisations in a range of obesity prevention initiatives. ^{25,26} Notably, Latin American countries have pioneered mandatory nutrition warning labels as a preventive measure for obesity.

The uptake and impact of any given intervention depend on factors such as cost, clinical effectiveness, regulatory approval, health system capacity, and whether interventions address multiple conditions (as some medications do). The variation in the potential impact and cost across interventions is shown in Nesta's blueprint to halve obesity in the UK.²⁷ While primary prevention approaches for weight management or increasing physical activity tend to be population-wide and cost-effective or relatively low-cost,²⁸ they remain underfunded across the world.^{29,30}

The rise of anti-obesity medications (AOMs)

As the burden of obesity grows, the increasing availability of AOMs (a form of secondary prevention) presents both an opportunity for improved health outcomes and a challenge for healthcare systems and payers.

They are an attractive form of weight management as they are non-invasive (currently administered via injection but oral tablets are on the near horizon, with an oral tablet by a pharmaceutical company (Eli Lilly) seeking approval in 2026³¹) and they do not require substantial changes to patients' lifestyles.²⁰

Pharmaceutical companies are increasingly viewing AOMs as an attractive investment proposition.

AOMs do require ongoing adherence from patients for longer lasting change, with studies showing that among users around 63% remain on therapy at one year, with that number dropping to around 14% by three years.³² The extent to which they have been prescribed to date depends on multiple factors, including whether a public or private health system is dominant, supply logistics, and regulatory approval status.³³

Currently, AOMs have a high uptake in private markets (400,000 patients in the UK, 100,000 in Denmark, and 100,000 in Germany³⁴) and in the countries they were launched in initially (particularly the US). In the UK, the NHS has begun rolling out Mounjaro (and consequently other AOMs) with priority for patients with the highest BMI and most comorbidities.³⁵ They can currently be prescribed to patients with a BMI of 35 (although in some instances it may be lower) and at least one co-morbidity, and after other weight management strategies such as lifestyle changes have been attempted.²⁰ NHS patients eligible for AOMs would typically be eligible for bariatric surgery, which has been shown to be more effective, but is a more invasive option.³⁶

Pharmaceutical companies are increasingly viewing AOMs as an attractive investment proposition. This is leading to many AOMs being added to various stages of their drug development pipeline, in the hope that AOMs with higher efficacy or improved safety profiles can be launched.³⁷ The AOM market is rapidly maturing, with some of the earliest available AOM patents projected to expire in a few years.³⁸ This will open the market to cheaper generic AOMs which could vastly increase their uptake.

As for the challenges, AOMs:

- are currently expensive (around £250 per month for Mounjaro and around £270 per month for Wegovy for the highest dose ^{39, 40}) if used over a long duration (there are no definite recommendations on the duration of treatment)
- face ongoing supply shortages
- remain unapproved in some countries such as Germany (where obesity is not officially recognised as a disease ⁴¹).

Faced with these constraints, life sciences organisations and health systems are increasingly seeking recognition of the broader value of weight management to the economy and society. This could contribute to increasing the roll out of treatments and initiatives through public health systems.⁴¹



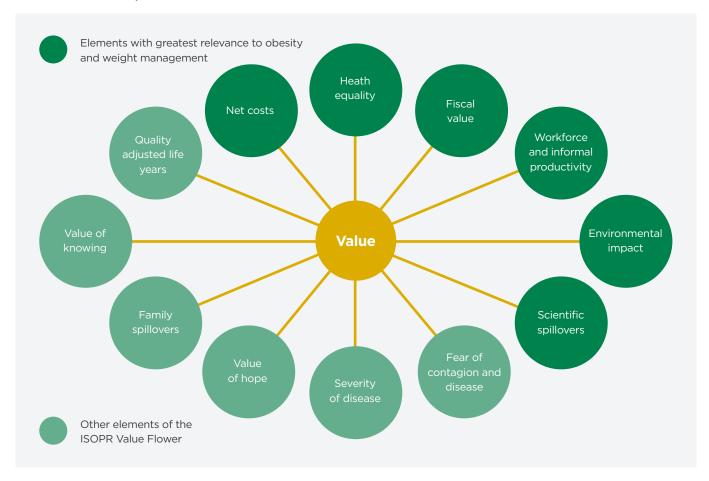
Effective weight management confers substantial broader value beyond improving individual health

Obesity is estimated to cost the UK health system around £11.4 billion a year. By bringing down childhood obesity levels, around £359 billion could be saved over the lifetime of the current generation of children. This includes direct medical costs, improved productivity, and increased workforce participation.⁴³

While the cost of obesity to health systems, as well as the direct health benefits and healthcare savings from effective weight management are well-documented, its broader societal and economic value is often ignored or underestimated.

However, there is a growing field of health economics research on the types and the extent of impacts that a health condition has on the economy and society, including its intangible and non-financial impacts. In this area of research, the ISPOR 'Value Flower', a framework for assessing elements of broader value for a health condition or therapeutic, is the most widely used. This Value Flower outlines 10 elements of value in addition to the traditional quality of life and healthcare cost components (Figure 2).

Figure 2. ISPOR Value Flower adapted to highlight essential elements of value for obesity and weight management (adapted from Neumann et al.⁴⁴)



Some of these elements are particularly relevant to obesity and underscore the importance of weight management.

Workforce and informal productivity

Effective weight management reduces absenteeism, early retirement, and the burden of both formal and informal caregiving. Improved physical and mental health outcomes translate into greater participation and productivity across the workforce. The global economic impact resulting from obesity or being overweight is expected to increase to 3.3% of global gross domestic product by 2060.45 In contrast, halting the rise in obesity such that its prevalence remains at 2019 levels could save around US\$2.2 trillion annually worldwide.⁴⁵

Fiscal value

By lowering rates of obesity-related disability and unemployment, weight management can reduce public spending on unemployment claims, sickness claims and social welfare programmes. Each year, obesity-related work absence and sickness benefits are estimated to cost the UK government just over £10 billion.⁴⁶

· Health equity

Obesity disproportionately affects disadvantaged populations, whether defined by geographical area, ethnicity, income, or education. 6.7 Targeted weight management interventions have greater scope for improving health outcomes in disadvantaged populations, and would contribute to reducing health disparities. The UK government estimated that around 29.2% of children aged 10 to 11 from the most deprived areas are living with obesity, compared to 13.0% of children in the least deprived areas. 47

• Environmental impact:

Reduced calorie consumption and lower transportation-related fuel use would reduce carbon emissions.

• Scientific spillovers:

Investment in obesity treatments, especially multi-indicated AOMs, may drive innovation and therapeutic breakthroughs in other disease areas, such as type 2 diabetes, cardiovascular disease and Alzheimer's disease, amplifying their long-term value.

When aggregated, the broader value of weight management across these elements far exceed healthcare cost savings. This reinforces the case for sustained investment in effective weight management and highlighting the extensive implications of both obesity and weight management.

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Actuarial implications of obesity and weight management

The implications of both the burden of obesity and weight management services are diverse, as actuaries work in a range of sectors including health and social care, insurance, pensions and government. Notably, effective weight management has opposing implications for life and health insurance compared to pension schemes and retirement income products. We outline several of the myriad ways in which actuarial work can be impacted by trends in obesity and weight management.

Life and health insurance

For life and health insurers, mortality and morbidity risks are key. These are the risks that policyholders die or require pay out due to illness or injury, leading to the insurer settling policies sooner or with a higher frequency. The future trends in obesity and weight management could reshape customer health profiles, influence claims experience, and require a reassessment of strategies across the full insurance life cycle.

From an underwriting and pricing perspective, actuaries would need to consider the impact of trends in obesity and weight management in morbidity and mortality assumption-setting. These impacts may be amplified as policyholders are likely to have greater access to weight management and a healthier lifestyle than the average person. ⁴⁸ Furthermore, customers' health profiles and retention rates may change over time due to AOM use and healthier lifestyles. ⁴⁹ Insurers may also reconsider restricting cover to individuals with high BMI.

Insurers will need to revisit and monitor their assumptions over time as new data emerges.

In terms of reserving and capital modelling, as trends in obesity-related ill health evolve, the cost of claims on protection products will change and are likely to become more uncertain. Additionally, scenario analyses considering the future obesity and weight management landscape are more challenging to parameterise, and expert input from life sciences and health system perspectives may be sought.

Medical cover

For medical insurance policies, an additional consideration for actuaries is the extent of coverage for weight management services. These services are generally not covered by private medical insurers as obesity does not generally result in acute conditions, which are the key conditions covered by these policies, and there is currently little evidence that policyholders may benefit from these services or treatments within their duration of cover. However, there are instances of public and private insurance coverage of weight management services,

predominantly nutrition programmes, clinical counselling and bariatric surgery, and particularly for longer term policies. ⁵² Additionally, wellness benefits provided by these policies, such as subsidised or free gym membership, are linked to primary prevention approaches for obesity. Coverage for AOMs is increasingly being considered, with Vitality in the UK and Medicaid in the US among the first to launch AOM coverage, though its current high cost and uncertain treatment duration are key deterrents. ^{53,54}

Pensions, annuities and longterm care

Longevity risk is a foremost concern for the pensions industry. This is the risk that members of pension schemes live longer than expected, leading to the pension provider making more payments than expected.

Effective weight management could result in longer life expectancy. Additionally, the scientific spillover value of AOMs could result in extended life expectancy in the longer term, beyond the direct impact of AOMs.

Pension schemes and insurers providing annuities may face uncertainty as to the extent that their funding reserves appropriately reflect the impact of AOMs. Insurers will need to revisit and monitor their assumptions over time as new data emerges, with those pension schemes wishing to insure in the future keeping a close eye on the insurers' pricing.



Those pension schemes that plan to run-on and retain management of the scheme for the long-term should consider how best to reflect the impact of AOMs and other medical developments in their technical provisions, and whether they should consider any longevity risk protection alongside their current plans.

The membership of pension schemes often skews more affluent than the general population. This adds further uncertainty – the burden of obesity is typically lower in higher socioeconomic groups, suggesting the impact of AOMs may be smaller. However, while the drugs are predominantly accessed via private prescriptions it may be the most affluent who see the greatest benefit.

Long-term care providers also face uncertainty over the duration of care required, as people are living longer in poor health, with many later life conditions linked to obesity.

Planning and assessing health and social care resource use

Estimating the burden of obesity is relatively complex. ORCs, many of which are common conditions, should be accounted for comprehensively.

To analyse the health impact of these ORCs appropriately, high-quality, granular estimates of their prevalence and incidence (usually via administrative health records) need to be identified and integrated, with due regard for how these ORCs are interrelated.

The social care impact of obesity is also difficult to quantify. Social care use primarily linked to functional limitations rather than disease prevalence and social care data is generally not well recorded (particularly for informal care provision).

Furthermore, projections of resource use involve complex analysis considering multiple factors such as changes in clinical guidelines, technological advancement, population demographics, health and social care policy, and health system capacity and structure.

These estimates and projections are vital for planning both health and social care provision and health insurance coverage.

Retirement and economic policy

The evolving burden of obesity and increasing use of weight management strategies will impact population demographics and the economy in numerous ways. Depending on the effectiveness of weight management, the working age population and pensioners could either spend more or less time in ill health, affecting retirement ages, workforce participation and dependency ratios.⁵⁵ The vast economic and fiscal value of obesity would encourage policymakers to prioritise the analysis of these impacts.

Modelling the long-term health and financial impacts of different interventions is required to inform these policies. This undertaking involves the challenges of factoring in uncertainty in obesity and weight management trends, and combining the real-world impact of multiple interventions, when there is limited data on their impact (either in combination or in isolation) in real-world settings.

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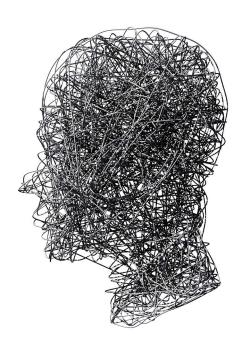
Conclusions

The burden of obesity is likely to continue its upward trajectory in future years. However, this will be kept in check by greater investment in and uptake of weight management interventions, particularly AOMs, as well as continued innovation in other obesity treatments and primary prevention approaches. Actuaries involved in forecasting, financing or contingency planning will need to assess and monitor the future burden of obesity and weight management.

For actuaries, this marks a structural inflection point. The role of expert judgement will also come ever more to the fore, alongside actuarial models. It may be appropriate to treat AOMs as an emerging risk with regular horizon-scanning of regulatory approvals and real-world evidence about uptake and effectiveness, and annual recalibration of morbidity and mortality assumptions.

Assessing and recognising the broader value of effective weight management will strengthen the case for tackling obesity among decision makers. As weight management is currently financed through a multi-payer patchwork, cross-sector collaboration and knowledge exchange between healthcare providers, policy makers and financial institutions will be crucial for the prevention and management of obesity. Continuing efforts in these areas will enable more of the broader value of weight management to materialise.

Assessing and recognising the broader value of effective weight management will strengthen the case for tackling obesity among decision makers.





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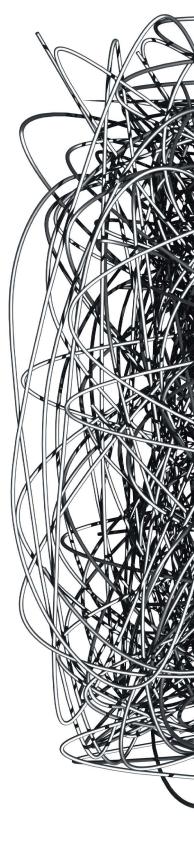


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